



Exempt Action Proposed Regulation Agency Background Document

Agency name	State Water Control Board
Virginia Administrative Code (VAC) citation	9 VAC 25-120
Regulation title	GENERAL VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM (VPDES) PERMIT REGULATION FOR DISCHARGES FROM PETROLEUM CONTAMINATED SITES, GROUND WATER REMEDIATION, AND HYDROSTATIC TESTS
Action title	The above regulation expires on February 26, 2008. The purpose of this action is to re-issue the regulation.
Document preparation date	May 14, 2007

When a regulatory action is exempt from executive branch review pursuant to § 2.2-4002 or § 2.2-4006 of the Administrative Process Act (APA), the agency is encouraged to provide information to the public on the Regulatory Town Hall using this form.

Note: While posting this form on the Town Hall is optional, the agency must comply with requirements of the Virginia Register Act, the *Virginia Register Form, Style, and Procedure Manual*, and Executive Orders 36 (06) and 58 (99).

Summary

Please provide a brief summary of all regulatory changes, including the rationale behind such changes. Alert the reader to all substantive matters or changes. If applicable, generally describe the existing regulation.

The General Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation for Discharges from Petroleum Contaminated Sites, Ground Water Remediation, and Hydrostatic Tests has existed since 1992. This general permit establishes limitations and monitoring requirements for discharges of petroleum-contaminated wastewater, chlorinated hydrocarbon contaminated wastewater, and wastewater from hydrostatic tests. The major changes proposed to the existing regulation are to permit discharges to state waters listed as public water supplies and to permit discharges of wastewater contaminated by chlorinated hydrocarbon solvents. Effluent limits for some constituents in the current General Permit have been amended to reflect aquatic toxicology data that was not available during the last re-issuance period for this regulation.

As with an individual VPDES permit, the effluent limits in the general permit are set to protect the quality of the waters receiving the discharges.

Substance

The proposed changes to the regulation are discussed below:

1. The Technical Advisory Committee (TAC) for the re-issuance of this permit regulation recommends expanding the scope of the regulation to allow discharges to waters listed as public water supplies.

Discharges of petroleum contaminated wastewater to surface waters listed as a source for public water supplies are not allowed under the present general permit regulation. Persons cleaning up petroleum releases and DEQ staff have found that not being able to cover this type of discharge under a general permit causes delays and sometimes results in less effective clean up of petroleum as other remedial approaches must be found to deal with petroleum contaminated wastewater.

Persons serving on the Technical Advisory Committee (TAC) for this regulation re-issuance believe that the primary concern of allowing discharges to waters listed as sources for public water supplies is the perception that allowing this type of discharge is not sufficiently protective of human health.

The Water Quality Standards for Public Water Supplies generally are more restrictive than aquatic toxicity-based values. The effluent limits recommended for discharges to waters listed as sources for public water supplies are based upon either the Water Quality Standard for Public Water Supplies or an aquatic toxicity-based value, whichever is more restrictive.

The TAC recommends using a higher monitoring frequency for wastewater discharges into surface waters listed as sources for public water supplies than the monitoring frequency required for discharges to non-public water supplies. This increased monitoring frequency will allow the permittee to identify treatment problems more quickly and take steps to correct their wastewater treatment system so that effluent limits can be maintained. Also, this permit does not allow discharges within 5 miles of a public water supply intake. The TAC members believe that effluent limits for discharges to public water supplies and the minimum five-mile distance from public water supply intakes are protective of human health.

Another advantage of permitting discharges to public water supplies is cost. Costs for most petroleum cleanups are paid for by the Virginia Petroleum Storage Tank Fund (VPSTF). When discharges from petroleum cleanup operations cannot be covered under this general permit, persons conducting the cleanup must manage the petroleum contaminated wastewater by other means including obtaining an individual VPDES permit to discharge that wastewater, re-infiltrating the wastewater through infiltration galleries at the site, or hauling the wastewater to an offsite treatment facility. All of these options typically are more expensive than discharging under a general permit and use of VPSTF monies for these extra costs is a poor use of a limited funding source.

Persons wishing to discharge under this general permit benefit by not having to pay permit fees that they would have to pay to obtain an Individual VPDES Permit. Persons also may obtain coverage under a general permit within a few weeks. By contrast, obtaining coverage under an

individual permit often takes more than six months. This savings in time is of great benefit to persons having time-critical projects.

2. A second major amendment that has been proposed is to allow the coverage of discharges of chlorinated hydrocarbon solvent-contaminated wastewater under this general permit. Chlorinated hydrocarbon solvents are common ground water contaminants. At the present time, persons wishing to clean up sites contaminated with these constituents must recover them and take them to an offsite treatment facility or receive coverage under an individual VPDES Permit. The cost of hauling wastewater to an offsite facility and the costs and time involved to apply for and receive an Individual VPDES Permit are barriers to cleanup, re-use, and economic re-development of brownfields.

Reasons to include wastewater discharges containing by chlorinated hydrocarbons in this general permit regulation include:

- A. There is, at present, no expeditious method to permit discharges involving these constituents. Lack of an expeditious method to permit these discharges may tempt persons to “take their chances” and proceed with a discharge without obtaining a permit for that discharge. Having these constituents addressed under a general permit would benefit those who want to abide by the rules and obtain a permit for their discharge while, at the same time, allow DEQ to have increased control over this type of discharge;
- B. Combining petroleum and solvent discharges within the same general permit is not a new concept. Several other states have “groundwater remediation general permits” that cover discharges from both petroleum and solvent cleanups;
- C. The treatment systems used to remove chlorinated hydrocarbon solvents from wastewater are the same as or very similar to those used to remove petroleum (especially gasoline) constituents from wastewater;
- D. Covering chlorinated hydrocarbon solvents under a general permit would be “Voluntary Remediation and Brownfield friendly;” by providing a more timely and cost-effective way of dealing with wastewater generated from cleanups at certain Brownfield-type sites; and
- E. The effluent limits derived by the TAC are based on the most conservative values identified (usually Public Water Supply standards) and are believed to be very protective of human health and the aquatic environment.

Disadvantages to including chlorinated hydrocarbon solvent constituents in this permit regulation may include:

- A. Many chlorinated compounds are highly toxic and it is felt by one member of the TAC that we have had insufficient time with which to evaluate the proposed effluent limits;
- B. Adding chlorinated solvents to this permit regulation increases the complexity and scope of the regulation; and
- C. Regional Storage Tank Program staff review permit applications (registration statements) and issue coverage under this particular general permit. Storage Tank Program staff are funded by the Virginia Petroleum Storage Tank Fund (VPSTF). Work related to issuing coverage for wastewater contaminated by chlorinated hydrocarbon solvents will need to be resolved between the Storage Tank and Water Permit Program staff.

The TAC members believe that a separate, non-petroleum compound general permit would be the best way to deal with discharges of chlorinated compounds. The TAC members also realize that the development of such a general permit is highly unlikely; especially in the near term. The majority of TAC members as well as DEQ management support expanding the scope of

this general permit to include chlorinated solvents. We feel that including chlorinated solvents in this general permit would encourage those who want to do the right thing and follow the rules to obtain coverage for their discharge. Likewise, DEQ would have increased control over these discharges and could ensure, to the extent practicable, that the discharges were as protective of human health and the environment as possible.

3. The TAC for this general permit regulation recommends adding several constituents to the list of parameters to be monitored during discharge operations. These recommendations are based upon the increased use of ethanol and better understanding of lead scavenger compounds used in leaded gasoline.

A. Ethanol

One of the constituents that the Technical Advisory Committee (TAC) has recommended adding to the list of parameters to be monitored is ethanol. Both ethanol and MTBE are additives in "reformulated" automotive gasolines (RFG). The Federal Energy Policy Act of 2005 altered the RFG program including the removal of the oxygenate mandate for RFG and set forth a national renewable fuel standard (RFS). Removal of the RFG oxygenate standard and implementation of the new RFS encouraged increased ethanol usage and discouraged MTBE usage. In the Spring of 2006, many RFG marketers in Virginia began being supplied with gasoline containing up to 10% ethanol (E10) in order to replace the MTBE.

Vehicles that can use gasoline containing variable amounts of ethanol already are available. These "flexible fuel vehicles" can operate on gasoline containing up to 85% ethanol (E85). At the present time, most "flexible fuel vehicles" and E85 fueling operations in Virginia are operated by the government at various levels or other entities that operate large vehicle fleets. Retail E85 operations exist in other states and it is possible that E85 fueling operations may become more common in Virginia.

According to EPA, ethanol biodegrades rapidly and is a short-lived compound in surface waters and subsurface aquifers. Human health risks from exposure to ethanol appear to be minimal, especially when compared with the risks posed by other gasoline constituents. Likewise, aquatic toxicity levels for ethanol are quite high. Based upon these factors, the TAC does not believe that effluent limits for ethanol are needed for the discharge of waters associated with petroleum products containing up to 10% ethanol.

Ethanol concentrations in discharges of petroleum products containing greater than 10% ethanol may pose risks to aquatic organisms. The TAC, therefore, proposes an effluent limit for ethanol when the wastewater was contaminated by a gasoline containing greater than 10% ethanol.

B. Ethylene Dibromide (EDB)

Ethylene dibromide (a.k.a. 1,2 dibromoethane, CAS Number: 106-93-4) is a compound added to leaded gasolines to remove lead from the combustion chamber and prevent lead oxide and lead sulfide deposits from forming within an internal combustion engine. Lead scavengers such as ethylene dibromide (EDB) are persistent in ground water and, in combination with the BTEX constituents can be good indicators of a leaded gasoline release. EDB can persist at low concentrations within ground water and is very toxic to humans. Based upon the toxicity and

persistence of this constituent, the TAC has recommended an effluent limit for EDB when wastewater has been contaminated by leaded gasoline.

C. 1,2-Dichloroethane (1,2 DCA)

Another compound commonly added to leaded gasoline as a lead scavenger is 1,2-Dichloroethane (1,2 DCA, CAS Number: 107-06-20). Like EDB, 1,2 DCA can persist at low concentrations within ground water and is quite toxic to humans. Based upon the toxicity and persistence of this constituent, the TAC has recommended an effluent limit for 1,2 DCA when wastewater has been contaminated by leaded gasoline.

4. The TAC proposes removing the monitoring requirement for volatile organics (VOCs), semi-volatile organics (SVOCs), and dissolved metals when the wastewater has been contaminated by used oil.

The present general permit requires permit holders to test their effluent for VOCs, SVOCs, and dissolved metals when the wastewater has been contaminated by used oil. These analyses are required once per year and no effluent limits have been established for them.

Used oil may contain many types of impurities or be contaminated by solvents or other chemicals. The original purpose for evaluating VOCs, SVOCs, and dissolved metals under this general permit was to determine if the wastewater at a site was a hazardous waste. The TAC evaluated this monitoring requirement and believes that this data is not needed as part of an ongoing monitoring regime. The value of analyzing water for these constituents is found prior to the discharge to determine if the discharge should be covered under this general permit. The TAC recommends addressing this issue through guidance and requiring these analyses as part of the permit registration process so that staff may determine if the discharge is eligible to receive coverage under this general permit.

5. The TAC proposes modifying existing effluent limits for total recoverable lead, xylenes, and naphthalene.

Aquatic toxicity data available through EPA are constantly updated as new studies are performed and existing data are further reviewed and evaluated. Effluent limits for some constituents in the current General Permit have been amended to reflect aquatic toxicology data that were not available during the last re-issuance of this general permit regulation. Constituents for which the TAC has recommended effluent changes based upon updated aquatic toxicity data are xylenes and naphthalene.

The effluent limit for total recoverable lead in the present general permit regulation is based on the equation:

$$\text{Effluent limit for total recoverable lead} = e^{(1.273(\ln \text{ hardness}) - 4.705)}$$

This equation came from the Water Quality Standard regulation. The Water Quality Standard for lead has been updated and the current Water Quality Standard for lead is:

$$\text{Effluent limit for total recoverable lead} = e^{(1.273(\ln \text{ hardness}) - 3.259)}$$

The TAC recommends that the effluent limit for lead be changed to reflect the current, promulgated Virginia Water Quality Standard for total recoverable lead.

Public Participation

Please include a statement that in addition to any other comments on the proposal, the agency is seeking comments on the costs and benefits of the proposal, the potential impacts of the regulation on the regulated community and the impacts of the regulation on farm or forest land preservation.

In addition to any other comments, the Board is seeking comments on the costs and benefits of the proposal, the potential impacts on the regulated community and on any impacts of the regulation on farm and forest land preservation. Also, the Board is seeking information on impacts on small businesses as defined in § 2.2-4007.1 of the Code of Virginia. Information may include 1) projected reporting, recordkeeping and other administrative costs, 2) probable effect of the regulation on affected small businesses, and 3) description of less intrusive or costly alternative methods of achieving the purpose of the regulation.

Anyone wishing to submit written comments for the public comment file may do so at the public hearing or by mail, email or fax to James Barnett, Virginia Department of Environmental Quality, P.O. Box 1105, Richmond, VA. 23218, telephone (804) 698-4289, fax (804) 698-4266, email jsbarnett@deq.virginia.gov. Comments may also be submitted through the Public Forum feature of the Virginia Regulatory Town Hall web site at: www.townhall.virginia.gov. Written comments must include the name and address of the commenter. In order to be considered comments must be received by 5:00 p.m. on the date established as the close of the comment period.

A public hearing will be held and notice of the public hearing can be found on the Virginia Regulatory Town Hall web site and in the Virginia Register of Regulations. Both oral and written comments may be submitted at that time.

Family impact

Assess the impact of this regulatory action on the institution of the family and family stability, including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.

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